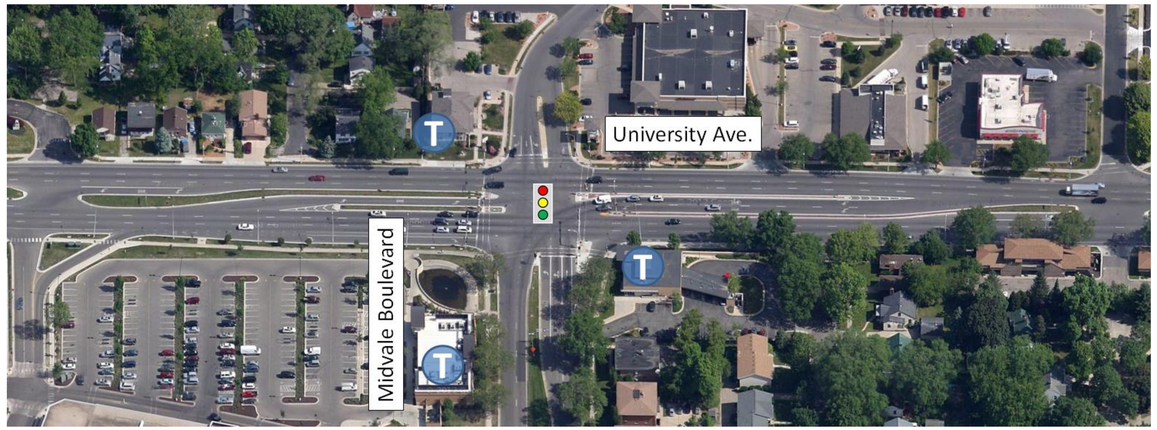
University Avenue & Midvale Boulevard

Scenario

Base Conditions



LB1: Eliminate North-South Split Signal Phasing

LB2: Eliminate Northbound and Southbound Through

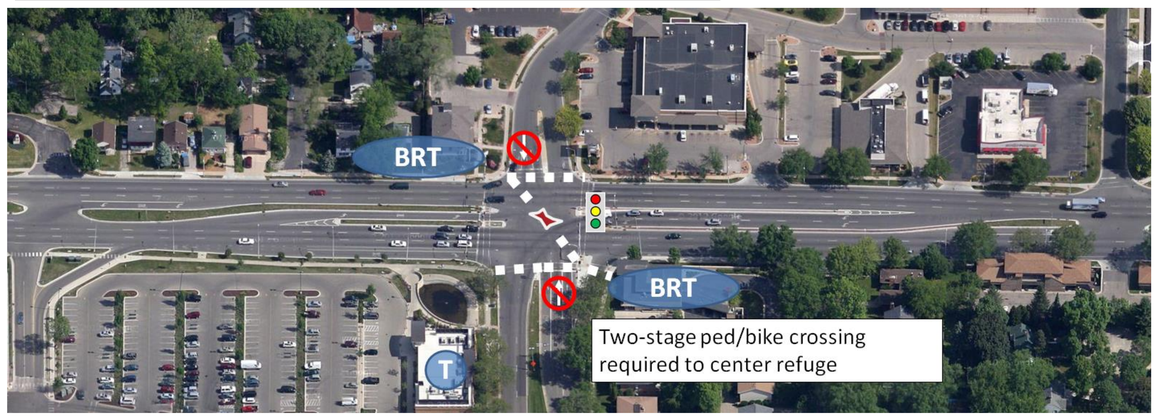


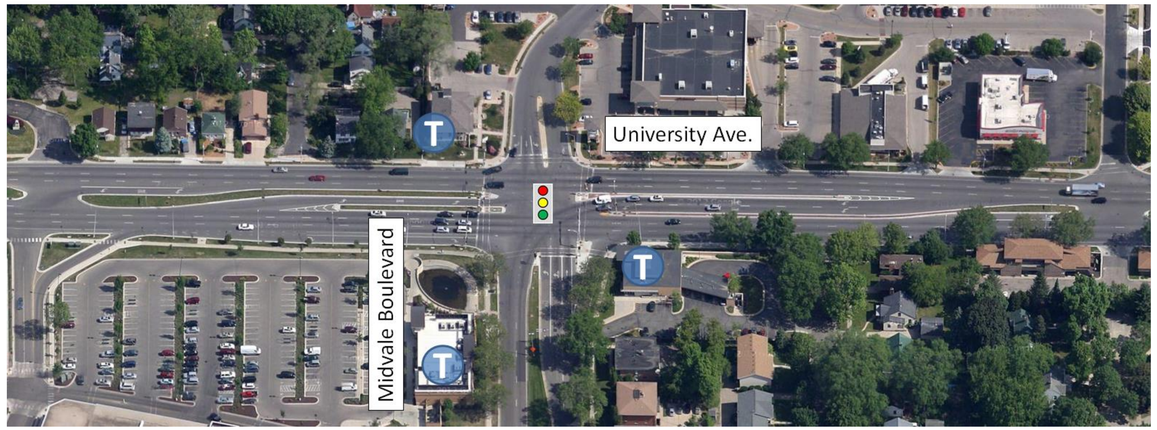
Image Sources: Bing.com, Google.com

Pedestrian	Bicycle	Transit	Motor Vehicles (115% of existing traffic)
Concerns regarding time to cross and small refuge areas within University Ave.	Difficult crossing	Existing Metro stops: • Outbound west of Midvale Blvd. • Inbound east of Midvale Blvd. • Southbound south of University Ave.	• Overall Intersection LOS E (70.7 s/vh) • 5 movements at LOS F • 3 additional movements approaching LOS F
Longer signal phases for crossing, potential to expand refuge areas	Longer signal phases for crossing	Generally compatible with BRT and local service	• Overall Intersection LOS D (41.0 s/vh) • 2 movements at LOS F • 3 additional movements approaching LOS F
Two-stage crossing only to a center refuge between NB and SB left-turning vehicle paths	Two-stage crossing only to a center refuge between NB and SB left-turning vehicles	Generally compatible with BRT and local service	• Overall Intersection LOS C (25.6 s/vh) • 3 movements approaching LOS F • Restricts some access

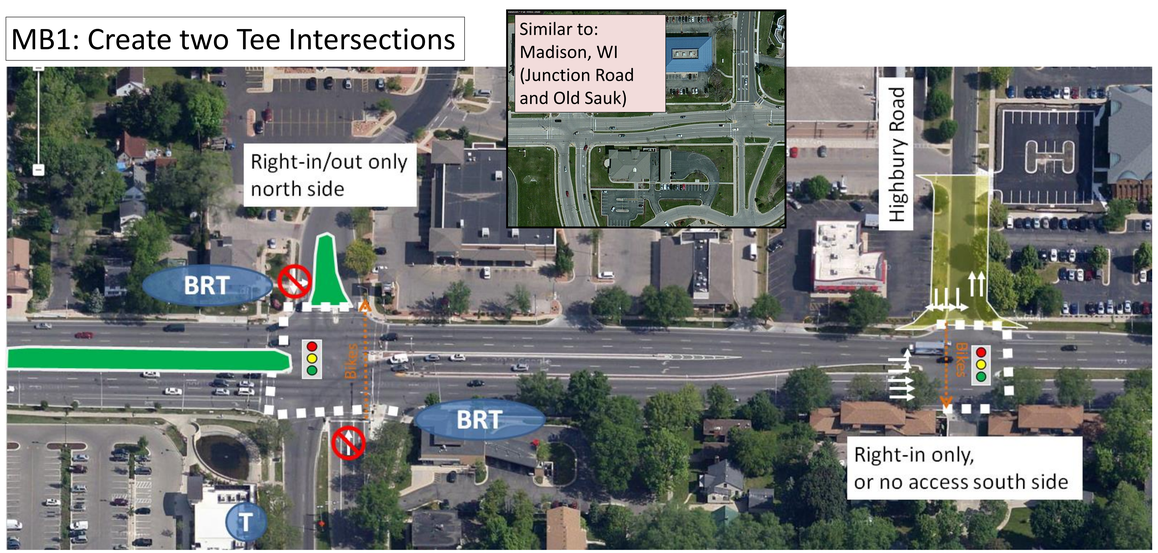
University Avenue & Midvale Boulevard

Scenario

Base Conditions



MB1: Create two Tee Intersections



MB2: 8-Lane Corridor (4 All-Purpose Lanes each direction)

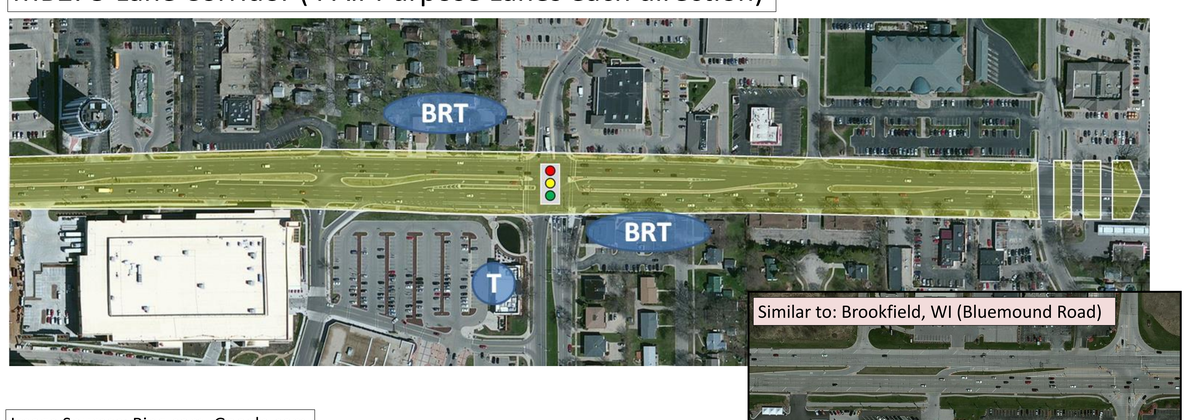


Image Sources: Bing.com, Google.com

Pedestrian	Bicycle	Transit	Motor Vehicles (115% of existing traffic)
Concerns regarding time to cross and small refuge areas within University Ave.	Difficult crossing	Existing Metro stops: • Outbound west of Midvale Blvd. • Inbound east of Midvale Blvd. • Southbound south of University Ave.	• Overall Intersection LOS E (70.7 s/vh) • 5 movements at LOS F • 3 additional movements approaching LOS F

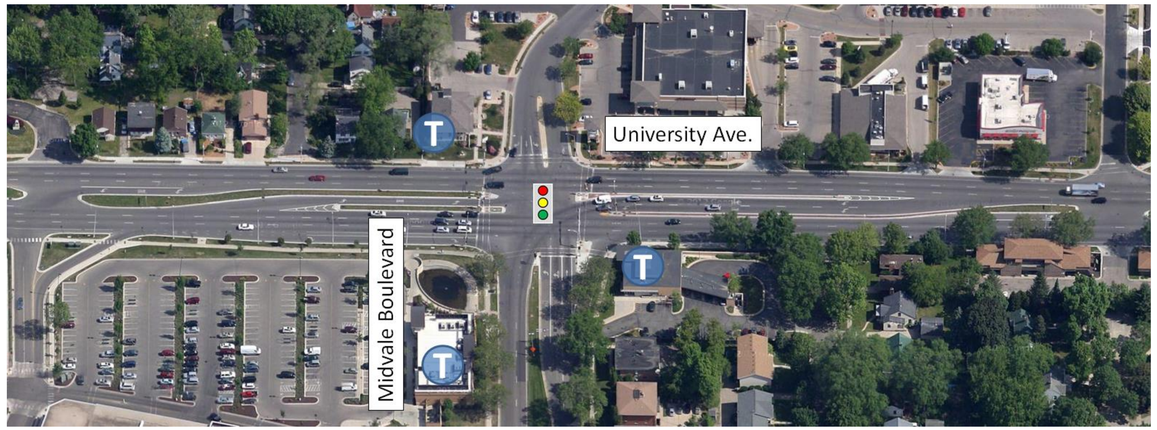
Two-stage ped crossing on one side only (west at Midvale, east at Highbury)	North-south crossing in one direction only at each intersection: (northbound at Midvale, southbound at Highbury)	Generally compatible with BRT and local service	• Midvale
			  • Overall Intersection LOS C (26.2 s/vh)
			  • 2 movements approaching LOS F
			  • Restricts some access
			• Highbury
			  • Overall Intersection LOS D (47.1 s/vh)
			  • 0 movements approaching LOS F
			  • Restricts some access

• Longer signal phases for crossing • Longer distances to cross • Little/no terrace along University Avenue for eastbound and westbound pedestrians	• Longer distances to cross • More lanes to navigate eastbound and westbound	Generally compatible with BRT and local service	• Overall Intersection LOS C (31.3 s/vh) • 2 movements at LOS F • 3 add'l movements approaching LOS F

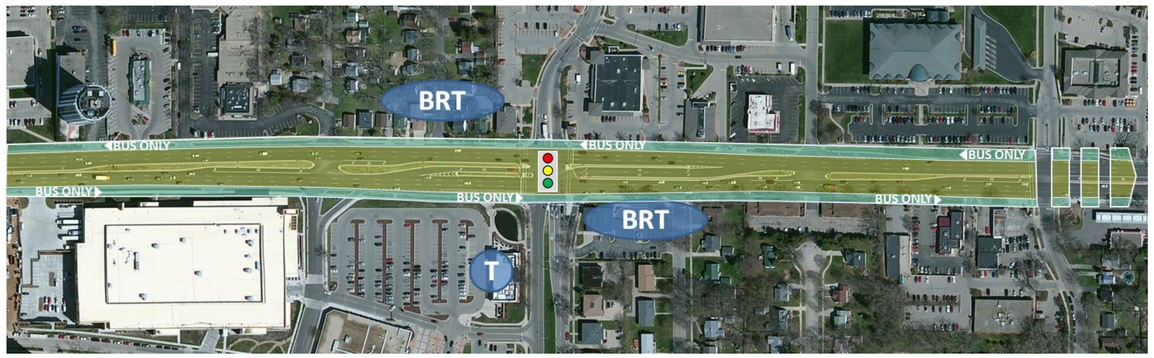
University Avenue & Midvale Boulevard

Scenario

Base Conditions



MB3: 8-Lane Corridor (3 All-Purpose Lanes, 1 Bike/Transit/Right-Turn Lane each direction)



HB2: Grade Separated Westbound Lefts and Northbound Rights

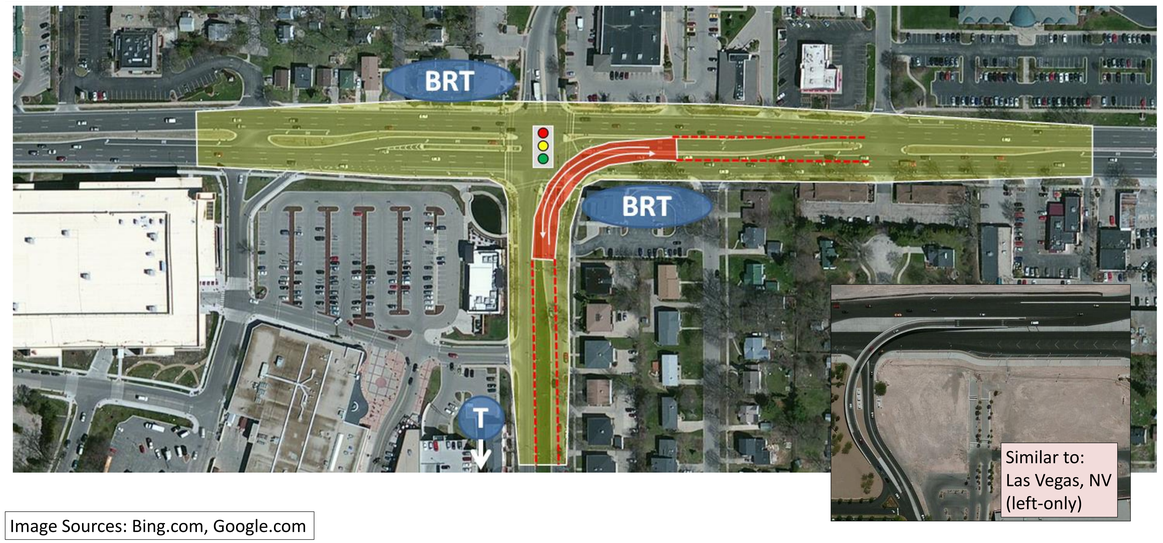


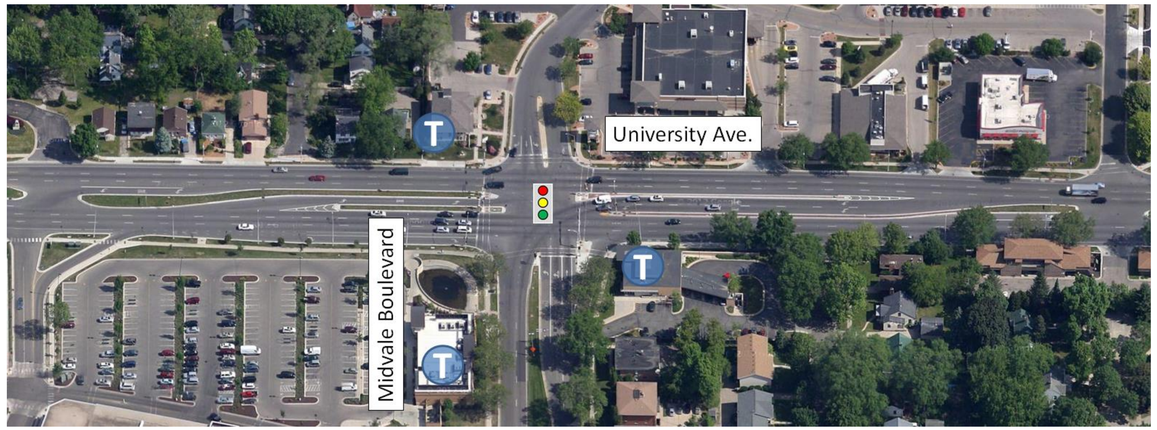
Image Sources: Bing.com, Google.com

Pedestrian	Bicycle	Transit	Motor Vehicles (115% of existing traffic)
Concerns regarding time to cross and small refuge areas within University Ave.	Difficult crossing	Existing Metro stops: • Outbound west of Midvale Blvd. • Inbound east of Midvale Blvd. • Southbound south of University Ave.	• Overall Intersection LOS E (70.7 s/vh) • 5 movements at LOS F • 3 additional movements approaching LOS F
• Longer signal phases for crossing • Longer distances to cross • Little/no terrace along University Avenue for eastbound and westbound pedestrians	• Longer distances to cross • More lanes to navigate eastbound and westbound • Wider on-street east-west accommodation, but shared with buses and right turns	Improves travel times and reliability for BRT and local service	• Overall Intersection LOS E (70.7 s/vh) • 5 movements at LOS F • 3 additional movements approaching LOS F
• Similar conditions under bridge as today but with less turning traffic • Longer crossing distances due to wider footprint to accommodate walls and structure	• Similar conditions under bridge as today but with less turning traffic • Longer crossing distances due to wider footprint to accommodate walls and structure	• Generally compatible with BRT and local service east-west • Requires relocation of local service transit stop on southbound Midvale Boulevard farther south	• Overall Intersection LOS C (34.8 s/vh) • 1 movement approaching LOS F

University Avenue & Midvale Boulevard

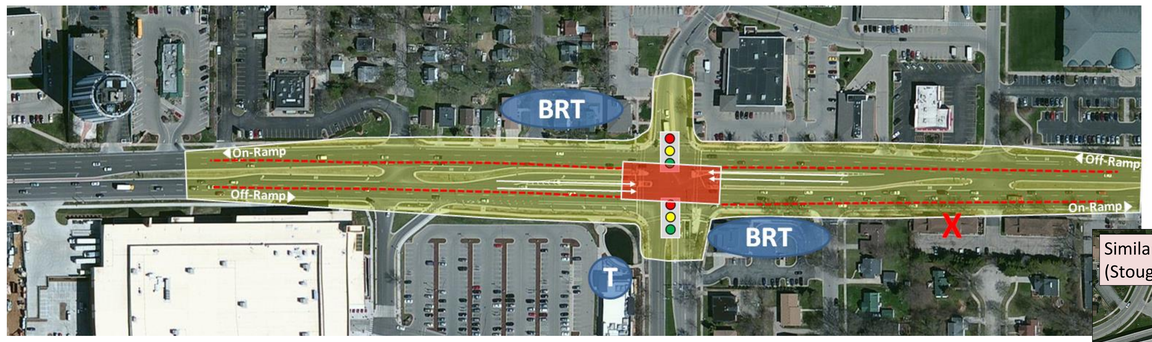
Scenario

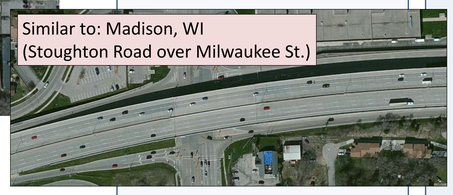
Base Conditions



Pedestrian	Bicycle	Transit	Motor Vehicles (115% of existing traffic)
Concerns regarding time to cross and small refuge areas within University Ave.	Difficult crossing	Existing Metro stops: • Outbound west of Midvale Blvd. • Inbound east of Midvale Blvd. • Southbound south of University Ave.	• Overall Intersection LOS E (70.7 s/vh) • 5 movements at LOS F • 3 additional movements approaching LOS F

HB4: Tight Urban Diamond Interchange (possible Campus Drive extension)

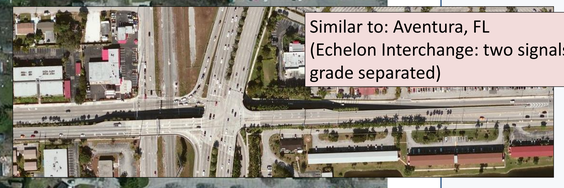




Pedestrian	Bicycle	Transit	Motor Vehicles (115% of existing traffic)

• Short crossing lengths and reduced traffic through signals
• Two intersections to cross north-south, rather than one
	• Short crossing lengths and reduced traffic through signals
	• Two signals to cross north-south
		Generally compatible with BRT and local service, but would require frequent entering and exiting along the corridor	• Westbound Ramps
			  • Overall Intersection LOS C (29.2 s/vh)
			• Eastbound Ramps
			  • Overall Intersection LOS B (12.7 s/vh)

HB5: Grade Separate Eastbound Through, Westbound Left, and Northbound Right



Pedestrian	Bicycle	Transit	Motor Vehicles (115% of existing traffic)

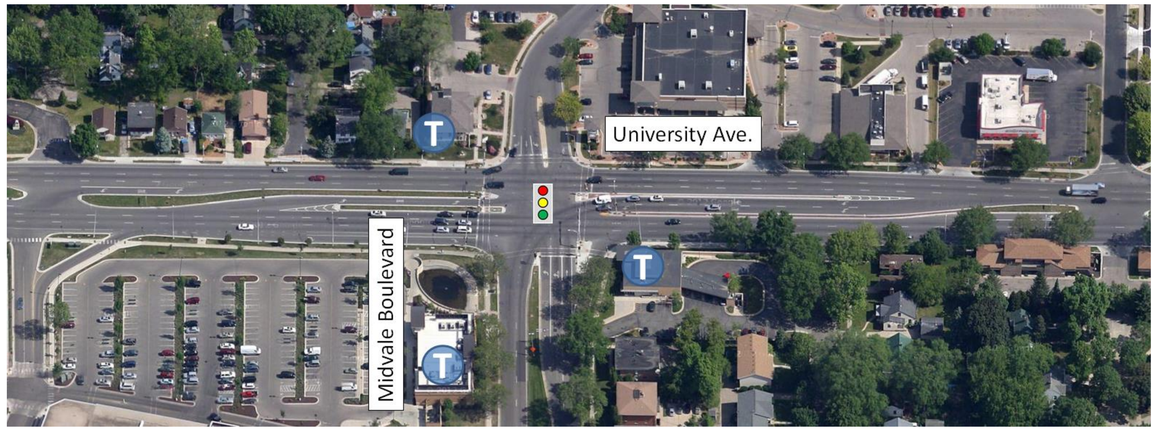
• Similar conditions under bridge as today but with less traffic
• Longer crossing distances due to wider footprint to accommodate walls and structure
	• Similar conditions under bridge as today but with less traffic
	• Longer crossing distances due to wider footprint to accommodate walls and structure
		• Generally compatible with BRT and local service east-west
		• Requires relocation of local service transit stop on southbound Midvale Boulevard farther south
			• Midvale Signal
			  • Overall Intersection LOS B (19.2 s/vh)
			  • 1 movement at LOS F
			• Elevated EBT, WBL, NBL Signal
			  • Overall Intersection LOS C (24.7 s/vh)

Image Sources: Bing.com, Google.com

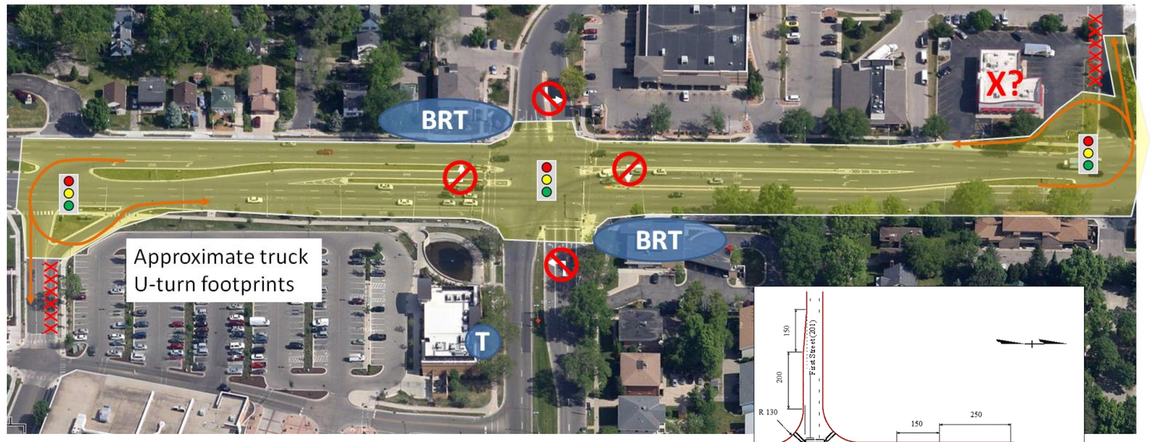
University Avenue & Midvale Boulevard

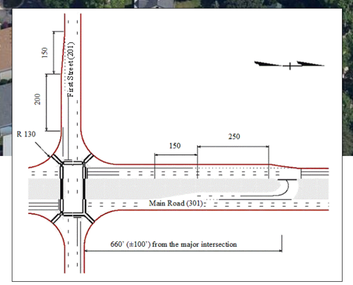
Scenario

Base Conditions



HB6: Indirect Left-Turn Corridor





Pedestrian	Bicycle	Transit	Motor Vehicles (115% of existing traffic)
Concerns regarding time to cross and small refuge areas within University Ave.	Difficult crossing	Existing Metro stops: • Outbound west of Midvale Blvd. • Inbound east of Midvale Blvd. • Southbound south of University Ave.	• Overall Intersection LOS E (70.7 s/vh) • 5 movements at LOS F • 3 additional movements approaching LOS F

• Significantly longer signal phases for crossing (two-phase signal)
• Eliminates left-turning vehicle conflicts
• Could also add two-stage signalized crossings at east and west u-turn locations
	• Significantly longer signal phases for crossing (two-phase signal)
	• Eliminates left-turning vehicle conflicts
	• Could also add two-stage signalized crossings at east and west u-turn locations
		• Generally compatible with BRT
		• Local outbound service to southbound Midvale Boulevard requires buses to make a U-turn
			• Midvale Signal
			  • Overall Intersection LOS C (21.5 s/vh)
			  • 1 movement approaching LOS F
			• West U-Turn Signal
			  • Overall Intersection LOS B (11.3 s/vh)
			  • Restricts some access
			• East U-Turn Signal
			  • Overall Intersection LOS A (7.4 s/vh)
			  • 1 movement approaching LOS F
			  • Restricts some access

Dismissed Alternatives:

- Providing Bus/Bike/Right-Turn Lane without Expansion (Poor operations without significant MV demand reduction)
- Flomax Intersection / Diverging Arterial (Poor operations and intimidating/unconventional bike/ped)
- Single Point Urban Interchange (higher impacts than HB1 – Tight Diamond Urban Interchange)
- Continuous Flow Intersection (poor bike/ped accommodations, large footprint, and no significant benefits over other alts)

Image Sources: Bing.com, Google.com